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| APPLICATION NO.      | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOK RHT NO. | CONFIRMATION NO. |
|----------------------|-------------|----------------------|----------------------|------------------|
| 10/047,365           | 01/14/2002  | Karl-Heinz Dörner    | Mag6657/LeA 34,814   | 5079             |
| 157 7940 05/28/2004  |             |                      |                      |                  |
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| PITTSBURGH, PA 15205 |             |                      |                      |                  |
|                      |             |                      | EXAMINER             |                  |
|                      |             |                      | TRAN THAO T          |                  |
|                      |             |                      | AIR UNIT             | PAPER NUMBER     |
|                      |             |                      | 1711                 |                  |

DATE MAILED: 05/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

|                               |                               |
|-------------------------------|-------------------------------|
| Application No.<br>10/047,365 | Applicant(s)<br>DORNER ET AL. |
| Examiner<br>Thao T. Tran      | Art Unit<br>1711              |

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) ☐ Of the above claim(s) 9-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |  |
|---|--|
| <p>1) <input type="checkbox"/> Notice of References Cited (PTO-852)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br/>             Paper No(s)/Mail Date _____</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)<br/>             Paper No(s)/Mail Date _____</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input type="checkbox"/> Other: _____</p> |
|---|--|

## DETAILED ACTION

### *Response to Remarks*

1. This is in response to the Remarks received on May 19, 2004. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.
2. Claims 1-11 are currently pending in this application. Claims 9-11 have been withdrawn as non-elected invention in the Paper of February 20, 2004. No claim has been amended.

### *Claim Rejections - 35 USC § 102*

3. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Vaverka et al. (US Pat. 5,667,595).

Vaverka teaches a solar module, comprising solar cells placed between a front plate and a rear support plate, and a polyurethane layer between the solar cells and each of the front and rear plates (see abstract; col. 1, ln. 7-11; claim 1). Hence, the polyurethane layers are part of the front side and the rear side.

In regards to claims 1-2, Vaverka teaches that the polyurethane to be transparent (see col. 2, ln. 50).

In regards to claim 3, Vaverka teaches that the rear side comprising a glass plate (see col. 3, ln. 28-30).

*Claim Rejections - 35 USC § 103*

4. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vaverka as applied to claim 1 above, and further in view of Shiomi et al. (US Pat. 6,245,987).

Vaverka is as set forth in claim 1 above and incorporated herein.

Vaverka teaches the polyurethane containing various additives (see col. 3, ln. 9-10).

However, the reference does not teach the rear side being composed of opaque polyurethane, or the opaque polyurethane containing a filler, such as chalk, glass platelets, or silicates.

Shiomi teaches a solar module 100 having a rear material 107, wherein the rear material is composed of a combination of materials such as polyurethane, asphalt, glass wool, calcium silicate (see Fig. 1; col. 6, ln. 9-10; col. 10, ln. 36-38; col. 11, ln. 8-11, ln. 16-18), making the polyurethane opaque. Shiomi further that the use of these materials in the rear side would provide high thermal insulation effects, which would facilitate the annealing effect in order to enhance performance (see col. 11, ln. 18-21).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have employed the material, as taught by Shiomi, in the rear side of Vaverka's solar module, for the purpose of improving durability, cost, and workability (see col. 10, ln. 36).

5. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vaverka as applied to claim 1 above.

Vaverka is as set forth in claim 1 above and incorporated herein.

Although Vaverka does not teach the front side as having a textured surface or the rear side being in the form of cooling fins, it would have been obvious to one of ordinary skill in the

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art, at the time the invention was made, to have modified the front side such that it would have had a textured surface for the purpose of increasing light absorption. And having the rear side being fin-shaped would increase the surface area, enhance dissipation of heat, and hence would increase the efficiency and lifetime of the solar module. Moreover, Applicants do not disclose any advantages of having a front side with textured surface or the rear side with fin shape over other shapes of the surfaces.

### *Response to Arguments*

6. Applicant's arguments filed May 19, 2004 have been fully considered but they are not persuasive.

Applicants contend that the reference of Vaverka differs from the presently claimed invention in that Vaverka does not teach a solar module containing a front side composed of transparent polyurethane, that the front side of Vaverka solar module is composed of glass. Applicants further restate a definition of a "side", as provided by Webster's New Collegiate Dictionary, that a "side" is "a surface forming a border or face of an object" or "an outer portion of something considered as facing in a particular direction <the upper side of a sphere>". However, in addition to these definitions, the Dictionary further defines a "side" as "the right or left part of the wall or trunk of the body" or "place, space, or direction with respect to a center or to a line of division (as of an aisle, river, or street). As pointed out by Applicants, Vaverka teaches a solar module containing a front glass plate, a rear support plate, solar cells between the plates, and a polyether-polyurethane resin layer between the solar cells and each of the plates. Thus, the polyurethane layers are part of the front side and the rear side of Vaverka solar module.

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In response to applicant's argument that the teachings of Shiomi and Vaverka cannot be combined because Shiomi does not teach a solar cell module having a front side composed of transparent polyurethane, applicants are reminded that Shiomi is used to illustrate that the rear side of the solar module composed of opaque polyurethane has been taught. It has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992).

#### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao T. Tran whose telephone number is 571-272-1080. The examiner can normally be reached on Monday-Friday, from 8:30 a.m. - 5:00 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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May 25, 2004



James J. Seidleck  
Supervisory Patent Examiner  
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